Seat No.: _____ Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
B. Pharm. - SEMESTER– VIII • EXAMINATION – SUMMER-2016

Subject Code:2280015 **Date:10/05/2016**
Subject Name: Genetic engineering and gene therapy
Time: 10:30 AM to 1:30 PM **Total Marks: 80**
Instructions:
1. **Attempt any five questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1	**(a)**	Explain the methods used for isolation of DNA with suitable diagram.	**06**
	(b)	Write a note no nucleic acid hybridization	**05**
	(c)	What do you mean by restriction enzymes? Explain the types of restriction enzymes in detail.	**05**
Q.2	**(a)**	What are vectors in genetic engineering? Enumerate the types of vectors. Explain plasmid as a vector in detail with diagram.	**06**
	(b)	Write applications of genetic engineering.	**05**
	(c)	Discuss DNA vaccine in detail.	**05**
Q.3	**(a)**	What are ribozymes? Write the applications of ribozymes.	**06**
	(b)	What are monoclonal antibodies? How they are produced using the techniques of genetic engineering?	**05**
	(c)	Discuss blotting techniques in detail.	**05**
Q.4	**(a)**	What are transgenic plants? How they are produces? Write the applications of transgenic plants.	**06**
	(b)	Write a note on DNA profiling and its applications.	**05**
	(c)	Explain the steps involves in gene cloning with suitable diagram.	**05**
Q.5	**(a)**	Write a note on anti-sense oligonucleotide therapy with suitable example.	**06**
	(b)	What is HUMULIN? How it is produced using recombinant DNA technology.	**05**
	(c)	Discuss DNA delivery methods in detail.	**05**
Q. 6	**(a)**	What is PCR? Explain the types and applications of PCR in detail.	**06**
	(b)	What is bacteriophage? Draw the diagram of bacteriophage.	**05**
	(c)	Write a note on quantification of nucleic acids.	**05**
Q.7	**(a)**	What is gene therapy? How we can use the gene therapy in cardiovascular diseases?	**06**
	(b)	Write a note on DNA sequencing and its types. Explain any one method of DNA sequencing in detail with suitable diagram.	**05**
	(c)	What are transgenic animals? Discuss the knock out animal models in detail.	**05**

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